



Preliminary Inventory of Plants Diversity in University of Uyo Main Campus

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

The preliminary inventory of plants which was carried out in University of Uyo main campus using the transect method to sample the area gave rise to 7 sampling units and resulted in the collection and identification of 76 species of plants in 33 families. The most frequent plant species in the area of study were members of the family Papilionaceae (30%), followed by members of the family Euphorbiaceae (26%) and members of the family Asteraceae (23%). Species of *Combretum* were found in all the sampling units except *Combretum racemosum* which was found in only one sampling unit. The result provided a medium for grouping the plants into 5 classes' based on their abundance. The classes were as follows: rare (17 plants), occasional (34 plants), frequent (21 plants), abundant (3 plants) and very abundant (1 plant). Generally, the vegetation in the area of study is under threat due to massive infrastructural development embarked upon by the university to enable different faculties and units move from the town campus. The rare species included *Acanthus montanus*, *Anthonotha macrophylla*, *Baphia maxima*, *Baphia polygalaceae*, *Callichilia stenosepala*, *Combretum bracteatum*, *Combretum hispidum*, *Dialium guineense*, *Harungana madagascariensis*, *Ludwigia suffruticosa*, *Mallotus oppositifolius*, *Pentaclethra macrophylla*, *Physalis angulata*, *Sesamum radiatum*, *Spondias mombin* and *Triumfetta heudelotii*. To ensure proper management of the rare plants, it is hereby suggested that more data on the distribution

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and frequency of these plant should be carried out on the undeveloped portion of the university main campus so that these rare plants could be introduced to the area allocated for the botanic garden in order to conserve them.

Keywords: Abundance; conservation; inventory; transect method; vegetation.

1. INTRODUCTION

The University of Uyo main campus is along Nwaniba Road, Uyo, it is about 4.5 km from the city center and covers an area of about 1443 hectares [1]. The main campus is occupied by the faculty of engineering and the faculty of sciences. The vision of the University of Uyo is to relocate fully to the main campus in order to leave the town campus and to have enough space to build modern structures. Due to this anticipated impact of urbanization and deforestation. The inventory of this area became very necessary in order to enable a proper monitoring of the environment that could lead to recommendations for conservation. The inventory of plants in an area serves as a historical reference point of the floral life in that area after its degradation [2]. Such degradation may be caused by encroachment due to civilization that could lead to the destruction of the vegetation.

The inventory of plants in a particular area is an essential part of plant taxonomy [3]. An inventory also serves as a scientific and educational report which is designed to prioritize plants for control, to provide information to those working on habitat restoration, to show areas where research is needed, to aid those who prepare or comment on environmental planning documents, and to educate public policy makers [4].

Species diversity can be partitioned into two components: Richness and Evenness oldest and most fundamental in community ecology [5,6,7,8,9]. Many authors have reported the significant effects of species richness on important ecological processes such as ecosystem productivity and stability [10,11,12], this remains controversial [13]. Complementarity is another important concept which is used to measure distinctiveness or dissimilarity between species assemblages [14]. Species richness and complementarity represent the most significant components of biodiversity for evaluating and monitoring purposes, also in landscape contexts [14,15]. Most techniques to estimate species richness do not require any

fundamental assumptions about community or landscape structure [14], and can be used as independent tools to assess and monitor the effects on species composition and diversity of management practices, which are often planned on a different basis (e.g by managing vegetation structure according to a map of habitat types). Moreover, the maximization of species richness represents one of the most important goals for the design of reserves and reserve networks, and the maintenance of native species diversity is a frequent goal of conservation. Thus, the inventory of species and the quantification of species richness represent important steps both in pure and applied plant ecology.

2. METHODOLOGY

This inventory was carried out in University of Uyo main campus in along Nwaniba Road, Uyo which is about 4.5 km from the city center and covers an area of about 1443 hectares [1]. There was a careful collection, identification, description and preservation of samples which are deposited in the University of Uyo Herbarium (UUH) of the Department of Botany and Ecological studies. The plants were authenticated by a taxonomist in the Department of Botany and Ecological studies, Faculty of Sciences, University of Uyo, Uyo.

Vegetation sampling was carried out in the University of Uyo main campus using the transect method. The line transect was used taking the university main entrance/Path as the line transect and Sampling units were chosen along the main road at a distance of about 205 m × 205 m.

Random sampling was carried out in these sampling units in different seasons ranging from January to December 2013 and the plant species that were found were documented.

Information gathered with the procedures above were as follows:

The description of the plant with emphasis on the following features: Habitat, habit, stem, leaves, inflorescence type, flowers and fruit (in some cases).

The terminology used in the description of these plants is that [16].

The frequency, density, relative density and abundance of species were calculated as follows:

Frequency (%) = {(no. of sampling units in which the species occurred/ Total number of sampling unit studied) × 100}

Density = (total number of individuals of the same species in all the sampling unit/ Total number of sampling units studied)

Relative density= {(total number of individuals of a specie/ total number of individuals of all species) X 100}

Abundance = (total no of the individuals of the species in all the sampling units/Number of sampling units in which the species Occurred)

3. RESULTS

Table 1 shows that a total of 76 species of plants in 33 families were encountered. The local names of the familiar ones were recorded.

Table 2 shows the frequency, density, relative density and abundance of plant species that were encountered. The most frequent plant species were members of the family Papilionaceae (30%), followed by members of the family Euphorbiaceae (26%) and members of the family Asteraceae (23%). Species of *Combretum* were also found in all the sampling units except *Combretum racemosum* which was found in only one sampling unit.

Table 3 shows the abundance class where plants were grouped into 5 classes' based on their abundance. The classes are as follows: rare (17 plants), occasional (34 plants), frequent (21 plants), abundant (3 plants) and very abundant (1 plant).

Table 1. Plant families, species, english names, local names of plants collected in University of Uyo Main Campus

S/N	Family	Species	English name	Local name
1	Acanthaceae	<i>Acanthus montanus</i> (Nees) T. Anders	False thistle	Mbara ekpe
2	Acanthaceae	<i>Asystasia gangetica</i> (L.) T. Anders	Creeping Foxglove	Mkpaha- uton Ntok eyin
3	Amaranthaceae	<i>Gomphrena celosoides</i> Mart.	Bachelor's button	
4	Anacardiaceae	<i>Spondias mombin</i> L.	Hog plum/	Nsukakara
5	Annonaceae	<i>Uvaria chamae</i> P. Beauv.	finger root	Nkarika ikot
6	Apocynaceae	<i>Callichilia stenosepala</i> Stapf		
7	Apocynaceae	<i>Rauvolfia vomitoria</i> Afzel.	Swizzle-stick tree	Mmon eba ebob
8	Apocynaceae	<i>Saba florida</i> (Benth) Bullock	Paste Rubber	Okpo ikot
9	Asteraceae	<i>Ageratum conyzoides</i> L.	Goat weed	Nnyano
10	Asteraceae	<i>Aspilia africana</i> (Pers.) C.D. Adams	Haemorrhage plant	Edeme-eron
11	Asteraceae	<i>Chromolaena odorata</i> (L) King & H.E. Robins.	Siam weed	Mbiot Awolowo
12	Asteraceae	<i>Emilia sonchifolia</i> L. DC	Mauve tassel flower	Utimense
13	Asteraceae	<i>Vernonia cinerea</i> L.	little iron wood	Utuenikan ifot
14	Caesalpiniaceae	<i>Anthothona macrophylla</i> P. Beauv.	African Rosewood	Nya
15	Caesalpiniaceae	<i>Cassia mimosoides</i> L.	Artillery Plant	
16	Caesalpiniaceae	<i>Dialium guineense</i> Wild	Black velvet tamarind	Ukuk
17	Combretaceae	<i>Combretum bracteatum</i> (Laus) Engl. & Diels	-	-
18	Combretaceae	<i>Combretum hispidum</i> Laus	-	-
19	Combretaceae	<i>Combretum racemosum</i> P. Beauv	Cristmas Rose	-
20	Combretaceae	<i>Combretum zenkerii</i> Engl. & Diels		Mbiasaka
21	Commelinaceae	<i>Commelina benghalensis</i> L.	Tropical Spiderwort	
22	Commelinaceae	<i>Palisota hirsuta</i> (Thumb)	Goat's knee	Edon ebod

S/N	Family	Species	English name	Local name
23	Connaraceae	<i>Manotes longiflora</i> Bak.	-	Ekpo ntipeyin
24	Convolvulaceae	<i>Ipomoea involucreata</i> P. Beauv	Morning glory weed	Mkpaefian
25	Costaceae	<i>Costus afer</i> Ker-Gawl	Bush cane	Mbriem
26	Cyperaceae	<i>Cyperus mapanioides</i> C. B. Clarke	-	-
27	Cyperaceae	<i>Fimbristylis littoralis</i> Gaudich	Lesser fimbry	-
28	Dennstaedtiaceae	<i>Pteridium aquilinum</i> (L.) Kuhn	Bracken fern	Nyama asabo
29	Euphorbiaceae	<i>Alchornea cordifolia</i> (Schum & Thonn) Muell. Arg.	Christmas bush	Mbom Ibong
30	Euphorbiaceae	<i>Euphorbia hirta</i> L.	Australian asthma herb	Etinkene ekpo
31	Euphorbiaceae	<i>Maesobotrya bateri</i> (bail) Hutch	Squirrel cherry	Nyated
32	Euphorbiaceae	<i>Mallotus oppositifolius</i> Geisel	Kamala	Nwariwa
33	Euphorbiaceae	<i>Manniophyton fulvum</i> Muell. Arg.	Gasso nut	Ekon ikon
34	Euphorbiaceae	<i>Phyllanthus amarus</i> Schum. & Thonn	Egg woman	Oyomo kiso aman k'edem.
35	Hypericaceae	<i>Harungana madagascariensis</i> Lam. ex Poiret	Dragon's Blood tree	Oton
36	Icacinaceae	<i>Icacina trichantha</i> Oliv.	Earth ball	Efik Ison
37	Lamiaceae	<i>Platostoma africanum</i> P. Beauv.		
38	Lamiaceae	<i>Solenostemon monostachyus</i> (P. Beauv.) Brig.	African deadnettle	Usio-mmon
39	Malvaceae	<i>Hibiscus surattensis</i> L.	Prickly hibiscus	Afat iban
40	Malvaceae	<i>Sida acuta</i> Burn. F.	Broad Leaved button weed	Akananwan idikpeke isoro
41	Malvaceae	<i>Urena lobata</i> L.	African jute fibre	Uduk akpan
42	Malvaceae	<i>Malvastrum capitatum</i> (Cav.) Griseb.		
43	Melastomataceae	<i>Heterotis rotundifolia</i> (Sm) Jac. Fel.	Rock Rose	Nyie ndan
44	Melastomataceae	<i>Melastomastrum capitatum</i> (Vahl) A. Fern & R. Fern		Udia inuen.
45	Mimosaceae	<i>Mimosa pudica</i> L.	Sensitive plant	Mbabak-iko
46	Mimosaceae	<i>Pentaclethra macrophylla</i> Benth.	African oil bean tree	Ukana
47	Onagraceae	<i>Ludwigia erecta</i> (L.) H. Hara		
48	Onagraceae	<i>Ludwigia hyssopifolia</i> (G. Don) Exell.	Water primrose	
49	Onagraceae	<i>Ludwigia suffruticosa</i> var <i>lineares</i> (Willd.) Oliv. ex O. Ktze.	water primrose	Mbiod-mbad
50	Papilionaceae	<i>Baphia maxima</i> bak	-	Emum
51	Papilionaceae	<i>Baphia polygalaceae</i> (Hook. f.) Bak.	-	Ikpa ibid Ntokeyin
52	Papilionaceae	<i>Centrosema pubescens</i> Benth	-	
53	Papilionaceae	<i>Crotalaria mucronata</i> Desv.	Streaked rattle pod	-
54	Papilionaceae	<i>Crotalaria sphaerocarpa</i> var. <i>sphaerocarpa</i>	Rattle pod	-
55	Papilionaceae	<i>Desmodium scorpiurus</i> (Sw) Desv.	Scorpion tick trefoil	-
56	Papilionaceae	<i>Indigofera tinctoria</i> L.	True Indigo	
57	Papilionaceae	<i>Lonchocarpus griffonianus</i> (Baill) Dunn.	-	Ududu
58	Papilionaceae	<i>Zonia latifolia</i> Sm.	Maconha brava	-
59	Pedaliaceae	<i>Sesamum radiatum</i> Schum. And Thonn.	Sesame	-

S/N	Family	Species	English name	Local name
60	Poaceae	<i>Axonopus compressus</i> (Sw) P. Beauv.	Carpet grass	Uyara uyat
61	Poaceae	<i>Pennisetum polystachion</i> (L.) Schult	Mission grass	
62	Portulacaceae	<i>Portulaca oleracea</i> L.	pigweed, purslane	Uton-ekpu
63	Rubiaceae	<i>Mitracarpus villosus</i> (Sw) DC	Girdle pod	Uman abia-ikana
64	Rubiaceae	<i>Oldenlandia herbacea</i> L.	Slender oldenlandia	
65	Rubiaceae	<i>Sabicea efulenensis</i> (Hutch.) Hepper		
66	Scrophulariaceae	<i>Scoparia dulcis</i> L.	Sweet broom weed	Ndiyan ession
67	Solanaceae	<i>Physalis angulata</i> L.	Wild cape goose berry	Ntuen okpo ikot
68	Sphenocleaceae	<i>Sphenoclea zeylanica</i> Gaertn.	-	-
69	Tiliaceae	<i>Triumfetta heudelotii</i> Planch ex Mast	-	-
70	Tiliaceae	<i>Triumfetta pentandra</i> A. Rich	-	-
71	Tiliaceae	<i>Triumfetta rhomboidea</i> Jacq.	-	-
72	Tiliaceae	<i>Triumfetta tomentosa</i> Boj.	-	-
73	Verbenaceae	<i>Clerodendrum splendens</i> G. Don.	Glory bower	Mmon oyot Adiaha Ekiko
74	Verbenaceae	<i>Stachytarpheta cayenensis</i> (L. C. Rich) Schau.	Brazilian tea	Adan-umon
75	Verbenaceae	<i>Stachytarpheta jamaicensis</i> (L.) Valv.	Indian snake weed	Adan-umon
76	Zingiberaceae	<i>Aframomum meleguata</i> K. Schum.	Alligator pepper	Ntuen ibok.

Table 2. Frequency, Density, Relative Density and Abundance of Plant Species Collected in University of Uyo Main Campus

S/N	Species	Frequency (%)	Density	Relative density (%)	Abundance
1	<i>Acanthus montanus</i>	14.29%	0.29	0.17%	2.00
2	<i>Aframomum meleguata</i>	42.86%	1.57	0.92%	3.67
3	<i>Ageratum conyzoides</i>	71.43%	3.86	2.25%	5.40
4	<i>Alchornea cordifolia</i>	57.14%	2.29	1.34%	4.00
5	<i>Anthonotha macrophylla</i>	71.43%	2.00	1.17%	2.80
6	<i>Aspilia Africana</i>	85.71%	4.00	2.34%	4.67
7	<i>Asystasia gangetica</i>	71.43%	3.29	1.92%	4.60
8	<i>Axonopus compressus</i>	57.14%	2.29	1.34%	4.00
9	<i>Baphia maxima</i>	42.86%	1.00	0.58%	2.33
10	<i>Baphia polygalaceae</i>	42.86%	0.57	0.33%	1.33
11	<i>Callichilia stenosepala</i>	42.86%	1.14	0.67%	2.67
12	<i>Cassia mimosoides</i>	57.14%	2.86	1.66%	5.00
13	<i>Centrosema pubescent</i>	100%	4.43	2.59%	4.43
14	<i>Chromolaena odorata</i>	85.71%	3.86	2.25%	4.50
15	<i>Clerodendrum splendens</i>	85.71%	4.86	2.84%	5.67
16	<i>Combretum bracteatum</i>	28.57%	0.57	0.33%	2.00
17	<i>Combretum hispidum</i>	42.86%	0.86	0.50%	2.00
18	<i>Combretum racemosum</i>	14.29%	0.43	0.25%	3.00
19	<i>Combretum zenkerii</i>	85.71%	4.00	2.34%	4.67
20	<i>Commelina benghalensis</i>	57.14%	2.14	1.25%	3.75

S/N	Species	Frequency (%)	Density	Relative density (%)	Abundance
21	<i>Costus afer</i>	57.14%	3.71	2.17%	6.50
22	<i>Crotalaria mucronata</i>	28.57%	1.43	0.83%	5.00
23	<i>Crotalaria sphaerocarpa</i> var. <i>sphaerocarpa</i>	71.43%	5.29	3.08%	7.40
24	<i>Cyperus mapanioides</i>	57.14%	2.57	1.50%	4.50
25	<i>Desmodium scorpiurus</i>	85.71%	6.00	3.51%	7.00
26	<i>Dialium guineense</i>	28.57%	0.29	0.17%	1.00
27	<i>Emilia sonchifolia</i>	100%	5.86	3.42%	5.86
28	<i>Euphorbia hirta</i>	57.14%	2.29	1.34%	4.00
29	<i>Fimbristylis littoralis</i>	42.86%	1.71	1.00%	4.00
30	<i>Gomphrena celosiodes</i>	57.14%	2.00	1.17%	3.50
31	<i>Harungana madagascariensis</i>	71.43%	2.00	1.17%	2.80
32	<i>Heterotis rotundifolia</i>	71.43%	4.29	2.50%	6.00
33	<i>Hibiscus surattensis</i>	42.86%	1.43	0.83%	3.33
34	<i>Icacina trichantha</i>	42.86%	2.14	1.25%	5.00
35	<i>Indigofera tinctoria</i>	71.43%	2.29	1.34%	3.20
36	<i>Ipomoea involucrata</i>	100%	6.71	3.92%	6.71
37	<i>Lonchocarpus griffonianus</i>	42.86%	1.29	0.75%	3.00
38	<i>Ludwigia erecta</i>	28.57%	1.29	0.75%	4.50
39	<i>Ludwigia hyssopifolia</i>	28.57%	1.29	0.75%	4.50
40	<i>Ludwigia suffruticosa</i> var. <i>lineares</i>	14.29%	0.29	0.17%	2.00
41	<i>Maesobotrya bateri</i>	14.29%	0.43	0.25%	3.00
42	<i>Mallotus oppositifolius</i>	14.29%	0.29	0.17%	2.00
43	<i>Malvastrum capitatum</i>	28.57%	1.00	0.58%	3.50
44	<i>Manniophyton fulvum</i>	28.57%	1.14	0.67%	4.00
45	<i>Manotes longiflora</i>	42.86%	1.29	0.75%	3.00
46	<i>Melastomastrum capitatum</i>	28.57%	1.14	0.67%	4.00
47	<i>Mimosa pudica</i>	85.71%	4.14	2.42%	4.83
48	<i>Mitracarpus villosus</i>	42.86%	2.29	1.34%	5.33
49	<i>Oldenlandia herbacea</i>	71.43%	4.43	2.59%	6.20
50	<i>Palisota hirsute</i>	57.14%	3.43	2.00%	6.00
51	<i>Pennisetum polystachion</i>	42.86%	1.57	0.92%	3.67
52	<i>Pentaclethra macrophylla</i>	28.57%	0.43	0.25%	1.50
53	<i>Phyllanthus amarus</i>	42.86%	2.71	1.59%	6.33
54	<i>Physalis angulata</i>	14.29%	0.29	0.17%	2.00
55	<i>Platostoma africanum</i>	57.14%	3.29	1.92%	5.75
56	<i>Portulaca oleracea</i>	28.57%	1.86	1.09%	6.50
57	<i>Pteridium aquilinum</i>	28.57%	2.71	1.59%	9.50
58	<i>Rauvolfia vomitoria</i>	57.14%	4.00	2.34%	7.00
59	<i>Saba florida</i>	14.29%	0.43	0.25%	3.00
60	<i>Sabicea effulensensis</i>	14.29%	1.43	0.83%	10.00
61	<i>Scoparia dulcis</i>	71.43%	5.86	3.42%	8.20
62	<i>Sesamum radiatum</i>	28.57%	0.57	0.33%	2.00
63	<i>Sida acuta</i> Burn	71.43%	4.43	2.59%	6.20
64	<i>Solenostemon monostachyus</i>	28.57%	1.00	0.58%	3.50
65	<i>Sphenoclea zeylanica</i>	14.29%	1.00	0.58%	7.00
66	<i>Spondias mombin</i>	14.29%	0.14	0.08%	1.00
67	<i>Stachytarpheta cayenensis</i>	42.86%	1.57	0.92%	3.67
68	<i>Stachytarpheta jamaicensis</i>	42.86%	1.89	1.09%	4.33
69	<i>Triumfetta heudelotii</i>	14.29%	0.29	0.17%	2.00
70	<i>Triumfetta pentandra</i>	28.57%	1.14	0.67%	4.00
71	<i>Triumfetta rhomboidea</i>	14.29%	0.57	0.33%	4.00

S/N	Species	Frequency (%)	Density	Relative density (%)	Abundance
72	<i>Triumfetta tomentosa</i>	14.29%	0.57	0.33%	4.00
73	<i>Urena lobata</i>	71.43%	1.57	0.92%	2.20
74	<i>Uvaria chamae</i>	71.43%	3.00	1.75%	4.20
75	<i>Vernonia cinerea</i>	42.86%	4.71	2.75%	11.00
76	<i>Zonia latifolia</i>	71.43%	4.14	2.42%	5.80

Table 3. Abundance classes

Classes	Stalks per square meter	Species
Rare	1 – 2.99	<ol style="list-style-type: none"> 1. <i>Acanthus montanus</i> 2. <i>Anthonotha macrophylla</i> 3. <i>Baphia maxima</i> 4. <i>Baphia polygalaceae</i> 5. <i>Callichilia stenosepala</i> 6. <i>Combretum bracteatum</i> 7. <i>Combretum hispidum</i> 8. <i>Dialium guineense</i> 9. <i>Harungana madagascariensis</i> 10. <i>Ludwigia suffruticosa var lineares</i> 11. <i>Mallotus oppositifolius</i> 12. <i>Pentaclethra macrophylla</i> 13. <i>Physalis angulata</i> 14. <i>Sesamum radiatum</i> 15. <i>Spondias mombin</i> 16. <i>Triumfetta heudelotii</i> 17. <i>Urena lobata</i>
Occasional	3 – 4.99	<ol style="list-style-type: none"> 1. <i>Aframomum meleguata</i> 2. <i>Alchornea cordifolia</i> 3. <i>Aspilia Africana</i> 4. <i>Asystasia gangetica</i> 5. <i>Axonopus compresus</i> 6. <i>Centrosema pubescent</i> 7. <i>Chromolaena odorata</i> 8. <i>Combretum racemosum</i> 9. <i>Combretum zenkerii</i> 10. <i>Commelina benghalensis</i> 11. <i>Cyperus mapanioides</i> 12. <i>Euphorbia hirta</i> 13. <i>Fimbristylis littoralis</i> 14. <i>Gomphrena celosiodes</i> 15. <i>Hibiscus surattensis</i> 16. <i>Indigofera tinctoria</i> 17. <i>Lonchocarpus griffonianus</i> 18. <i>Ludwigia erecta</i> 19. <i>Ludwigia hyssopifolia</i> 20. <i>Maesobotrya bateri</i> 21. <i>Malvastrum capitatum</i> 22. <i>Manniophyton fulvum</i> 23. <i>Manotes longiflora</i> 24. <i>Melastomastrum capitatum</i> 25. <i>Mimosa pudica</i>

Classes	Stalks per square meter	Species
		26. <i>Pennisetum polystachion</i> 27. <i>Saba floridae</i> 28. <i>Solenostemon monostachyus</i> 29. <i>Stachytarpheta cayenensis</i> 30. <i>Stachytarpheta jamaicensis</i> 31. <i>Triumfetta pentandra</i> 32. <i>Triumfetta rhomboidea</i> 33. <i>Triumfetta tomentosa</i> 34. <i>Uvaria chamae</i>
Frequent	5 – 7.99	1. <i>Ageratum conyzoides</i> 2. <i>Cassia mimosoides</i> 3. <i>Clerodendrum splendens</i> 4. <i>Costus afer</i> 5. <i>Crotalaria mucronata</i> 6. <i>Crotalaria sphaerocarpa</i> var. <i>sphaerocarpa</i> 7. <i>Desmodium scorpiurus</i> 8. <i>Emilia sonchifolia</i> 9. <i>Heterotis rotundifolia</i> 10. <i>Icacina trichantha</i> . 11. <i>Ipomoea involucrata</i> 12. <i>Mitracarpus villosus</i> 13. <i>Oldenlandia herbacea</i> 14. <i>Palisota hirsuta</i> 15. <i>Phyllanthus amarus</i> 16. <i>Platostoma africanum</i> 17. <i>Portulaca oleracea</i> 18. <i>Rauvolfia vomitoria</i> 19. <i>Sida acuta</i> Burn. 20. <i>Sphenoclea zeylanica</i> 21. <i>Zonia latifolia</i>
Abundant	8 – 10. 99	1. <i>Sabicea effulenensis</i> 2. <i>Scoparia dulcis</i> 3. <i>Pteridium aquilinum</i>
Very abundant	11 +	1. <i>Vernonia cinerea</i>

Pictures of Some Uncommon Plants in University of Uyo Main Campus



Fig. 1. *Anthonotha macrophylla*
P. Beauv.
(Papilionaceae)



Fig. 2. *Clerodendrum splendens*
G. Don (Verbenaceae)



Fig. 3. *Sabicea efulenensis*
(Hutch.) Hepper
(Rubiaceae)



Fig. 4. *Mariscus longibracteatus* Cherm. (Cyperaceae)



Fig. 5. *Cyperus procerus* Rottb (Cyperaceae)



Fig. 6. *Heterotis rotundifolia* (sm) Jac.-Fel (Melastomataceae)



Fig. 7. *Ludwigia hyssopifolia* (G. Don) Exell (Onagraceae)



Fig. 8. *Manotes longiflora* (Connaraceae)



Fig. 9. *Pycrus lanceolatus* (Poir) C. D. CL. (Cyperaceae)



Fig. 10. *Callichilia stenosepala* (Apocynaceae)



Fig. 11. *Kyllinga pumila* Michx (Cyperaceae)



Fig. 12. *Cyperus mapaniodes* C. B. Cl (Cyperaceae)



Fig. 13. *Combretum bracteosum* P. Beauv (Combretaceae)

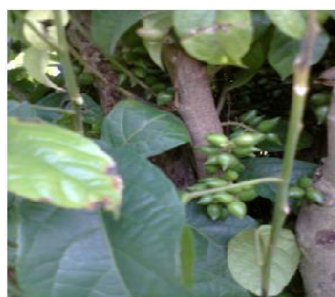


Fig. 14. *Maesobotrya barteri* (Baill.) Hutch (Euporbiaceae)



Fig. 15. *Hibiscus surattensis* L. (Malvaceae)



Fig. 16. *Stachytarpheta jamaicensis* (linn.) valv. (Verbenaceae)



Fig. 17. *Stachytarpheta cayenensis* (L. C. Rich) Schau (Verbenaceae)



Fig. 18. *Uvaria chamae* P. Beauv. (Annonaceae)



Fig. 19. *Icacina trichantha* Oliv. (Icacinaceae)



Fig. 20. *Acanthus montanus* (Nees) T. Anders (Acanthaceae)



Fig. 21. *Ludwigia erecta* (L.) H. Hara (Onagraceae)

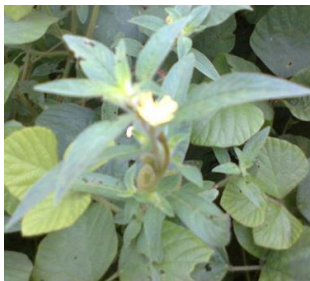


Fig. 22. *Ludwigia suffruticosa* (Willd.) Oliv. ex O. Ktze. (Onagraceae)



Fig. 23. *Oldenlandia herbacae* L. (Rubiaceae)



Fig. 24. *Cassia mimosoides* L. (Caesalpinaceae)



Fig. 25. *Gomphrena celosioides* Mart(Amaranthaceae)



Fig. 26. *Platostoma africanum* P. Beauv. (Lamiaceae)



Fig. 27. *Crotolaria mucronata* Desv(Papilionaceae)



Fig. 28. *Combretum racemosum* P. Beauv (Combretaceae)



Fig. 29. *Solenostemon monostachyus* (P. Beauv) Brig (Lamiaceae)



Fig. 30. *Vernonia cinerea* (L.) Less (Asteraceae)



Fig. 31. *Indigofera tinctoria* L. (Papilionaceae)



Fig. 32. *Crotonia sphaerocarpa* Perr. Ex D C (Papilionaceae)



Fig. 33. *Mitracarpus villosus* (sw) D C. (Rubiaceae)



Fig. 34. *Zornia latifolia* sm (Papilionaceae)



Fig. 35. *Sphenoclea zeylanica* Geartn. (Sphenocleaceae)



Fig. 36. *Fimbristylis littoralis* Gaudich (Cyperaceae)



Fig. 37. *Trriumfetta rhomboideae* Jacq (Tiliaceae)



Fig. 38. *Triumfetta tomentosa* Boj (Tiliaceae)



Fig. 39. *Triumfetta pentandra* A. rich (Tiliaceae)

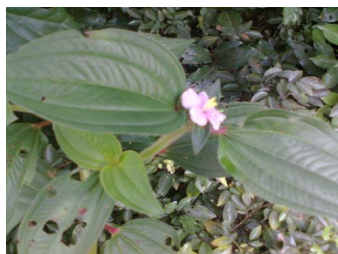


Fig. 40. *Melastomastrum capitatum* (Vaahl) A & R. Fem (Melastomataceae)



Fig. 41. *Triumfetta heudelotii* Planch ex mast (Tiliaceae)

Description of the Plants Species

There are 76 species of plant in 33 families which were collected in the study area and their description is as follows:

Family Acanthaceae

1. *Acanthus montanus* (Nees) T. Anders

A perennial herb with an erect stem up to 20 – 30 cm tall. It maybe prostrate in some cases, hairy and herbaceous. The leaf is simple, opposite, exstipulate, sessile and irregularly lobed with sharp thorns on the margin. The leaf is also hairy.

2. *Asystasia gangetica* (L.) T. Anders

An annual herb with an herbaceous stem which is woody at the base and is 0.3 cm in diameter, up to 30-35 cm tall, and angled. The leaf is simple, opposite, petiolate, exstipulate, acuminate, entire, obtuse, broadly lanceolate, glabrous and 4-11 cm long and 1.5-6 cm wide. The petioles appear brown in older/basal leaves but in younger leaves it has the same color with the leaves. The inflorescence is a spike and the flowers are white in colour.

3. *Gomphrena celosiodes* Mart

An annual herb with a prostrate, herbaceous, brown stem. The leaf is simple, opposite, exstipulate, petiolate (with petioles wrapping round the stem and 0.2 cm long), acute, entire, obtuse, lanceolate, hairy, and 1.8 - 3.8 cm long and 0.5 - 1.5 cm broad. The inflorescence is a compressed spike arising from the leaf axil.

Family Anacardiaceae

1. *Spondias mombin* L.

A glabrous shrub which grows to 1.5-2 m tall. The stem is woody, erect, branched, and

glabrous. The leaf is petiolate (petiole is 0.5 cm long), compound (pinnate), with 7 pairs of leaflets. The leaf may be as long as 30-50 cm. the leaflet is acuminate, broadly serrulate, oblique, lanceolate, glabrous and 2-15 cm long and 2-5 cm wide.

Family Annonaceae

1. *Uvaria chamae* P. Beauv.

A perennial shrub with an erect, woody, branched, stem which can grow up to a height of 2-2.5 m. The stem has a leathery bark. The leaf is simple, alternate, exstipulate, petiolate, with petiole which is about 5-12 cm long and 2-5 cm broad. The fruit is a bunch of berries which appears green when unripe and yellow when ripe.

Family Apocynaceae

1. *Callichilia stenosepala* Stapf.

An erect shrub which produces milky latex when cut, with a woody, branched and rounded stem. The leaf is simple, opposite, exstipulate, petiolate (with petioles 0.2 cm long), acute, entire, obtuse, lanceolate, glabrous, 5 – 12 cm long and 1.5 – 6 cm wide. The inflorescence cymose. The flower is bisexual, calyx, 5, green in colour, corolla, 5, large, up to 3cm long and 1.5 cm wide, white, fused at the base to form a tube.

2. *Rauvolfia vomitoria* Afzel.

A perennial shrub which produces milky latex and grows up to a height of 1.5 – 2 m tall. The stem is erect, woody, branched with a unique dichotomous branching. The leaf is simple, opposite, exstipulate, acute, entire, obtuse, lanceolate, and glabrous and 10 - 30cm long and 4 – 10 cm wide.

3. *Saba florida* (Benth) Bullock

A climbing shrub with a woody, climbing, produces copious latex hairy stem which is 0.4 cm in diameter. The leaf is simple, opposite, petiolate, acuminate, entire, obtuse, lanceolate with a hairy surface which is 5 – 12 cm long and 2.5 -4 cm wide. The flower is tubular, scented, and white in colour.

Family Asteraceae

1. *Ageratum conyzoides* L

An annual weed, with an erect, unbranched, herbaceous, stem. The leaf is simple, alternate to opposite, petiolate with petioles 1-2.5 cm long and hairy, acute, undulate, sagittate, and 2.5 – 8 cm long and 1.5 – 4 cm wide. The inflorescence is an umbel.

2. *Aspilia Africana* (Pers.) C. D. Adams

A perennial herb which grows to a height of 50 - 150cm tall. The stem is erect, herbaceous, hairy, and rounded. The leaf is simple, petiolate, opposite, exstipulate and green in colour. The leaf is cuspidate, serrulate, truncate, sagittate, and hairy on both sides. The leaf blade is 8 – 10 cm long and 2.5 – 5 cm broad with 5 pairs of laterally ascending nerves. The inflorescence is a head with a single capitulum on the peduncle. The calyx has 10 – 13 sepals, green in colour and contorted. Corolla has 8 -10 petals, yellow in colour, very conspicuous, imbricate aestivation. Anthers are numerous.

3. *Chromolaena odorata* (L) King & H.E. Robins

An erect herb which can grow to a height of 50 – 60 cm tall. The stem is herbaceous, hairy, round, and about 5 mm in diameter. The leaf is simple, petiolate (petioles about 1-3 cm long), exstipulate, opposite, cuspidate, serrate, acute, sagittate, smooth on the upper surface and hairy on the lower surface and 8 – 14 cm long and 3-7 cm wide.

4. *Emilia sonchifolia* L. DC

An annual herb with a prostrate, herbaceous stem. Leaves are simple, sessile, hairy on the upper surface and glabrous on the lower surface. The leaves at the base of the plant seem to be petiolate. The leaf is mucronate, serrate, auriculate, cordate and is 7 – 15 cm

long and 3 – 7 cm wide. The leaf base auriculate/sagittate. The inflorescence is a simple corymb.

5. *Vernonia cinerea* L.

An annual herb which may grow to a height of 20 – 30 cm tall, with an erect, herbaceous, green, scantily hairy stem. The leaf is simple, alternate, hairy, ovate-lanceolate, acute, undulate, obtuse, 1 – 4 cm long and 0.8 - 1.8 cm broad. The inflorescence is a panicle with purple flowers.

Family Caesalpiniaceae

1. *Anthonotha macrophylla* P. Beauv.

A glabrous shrub with an erect, woody, glabrous, branched, and rounded stem. The leaf is compound (unipinnate), exstipulate, petiolate, glabrous with 2 - 4 pairs of leaflets. The leaflets are mucronate, entire, with a rounded base, lanceolate. The inflorescence is a raceme. The fruit is a pod with 3 - 4 exalbuminous seeds.

2. *Cassia mimosoides* L.

A road side weed with a woody, erect, sometimes prostrate, profusely branched, hairy stem which grows up to 20 - 40 cm tall. The stem is brown towards the base and green towards the apex. The leaf is compound, petiolate, stipulate, alternate, with 30 - 70 pairs of tiny leaflets which is 0.2 cm long and 0.1cm wide, and are linear in shape and hairy. The inflorescence is a spike flowers which are yellow in colour.

3. *Dialium guineense* Wild

A glabrous tree, which grows up to a height of 10 – 15 m tall. The stem is woody, erect, and branched. The leaf is compound (imparipinnate), alternate, petiolate (with petioles 0.5 cm long), with 3 pairs of leaflets. The leaflets are emarginate, entire, obtuse, lanceolate, glabrous, and 5-9 cm long and 2-5 cm broad. The inflorescence is a panicle. The fruit is black velvet, with a fleshy mesocarp and a round seed. The mesocarp is the edible part of the fruit.

Family Combretaceae

1. *Combretum bracteatum* (Laus) Engl. & Diels

A glabrous shrub with and erect, scrambling, glabrous stem which possess prominent scars

left by fallen leaves and is about 1 cm in diameter. The plant can grow to a height of 100 – 130 cm tall. The leaf is simple, alternate at the base and opposite towards the apex, petiolate (petioles are 0.8 cm long), acuminate, entire, truncate, lanceolate, glabrous and 6 – 14 cm long and 3.5–5 cm wide with 8 pairs of laterally ascending nerves. The inflorescence is a raceme. The flowers are bracteate (bracts are persistent, red in colour, 1 – 2 cm long and lanceolate in shape). The flower is gamopetalous with 10 - 11 anthers. The filament is about 2 cm long and red in colour.

2. *Combretum hispidum* Laus

A woody shrub or climber. The stem is woody, climbing, branched, rounded, hairy and green in colour. The leaf is simple, alternate, at the base and opposite towards the apex, cuspidate, entire, auriculate, petiolate, exstipulate, and glabrous, 5 – 7 cm long and 3 – 5 cm wide. The inflorescence is a spike-like raceme, 30 – 45 cm long, and has numerous flowers. The flowers are pedicellate, bracteolate; bracts are early caducous, lanceolate in shape and 0.5 – 1.5 cm long. Stamens are longer than the petals, and 8 - 10 anthers. Petals are 3 – 3.5 cm long.

3. *Combretum racemosum* P. Beauv

A woody shrub which may be erect or climbing. The stem is woody, branched, and 0.5 - 0.6 cm in diameter. The leaf is simple, opposite, petiolate (with petioles 0.2 cm long), exstipulate, acuminate, entire, truncate, lanceolate, 5 – 10cm long and 3 – 5 cm wide. The inflorescence is a panicle; the stalk (peduncle) is hairy. The flowers are bracteate; bracts are hairy, white on the upper surface and light green on the lower surface, and it is 0.8 – 1.7 cm long and 0.3 – 0.8 cm wide. The calyx is tubular, about 0.3 cm long, and green in colour. The petal is 4 in number, pink in colour. Stamens have 8 – 10 anthers and pink in colour.

4. *Combretum zenkerii* Engl. & Diels

A climbing shrub which has a woody, angled (3 sided), scantily hairy, brown stem. The leaf is simple, ternate (in 3 s), petiolate, exstipulate, acuminate, entire, obtuse, lanceolate, glabrous, 4.5 -13 cm long and 0.2 - 0.5 cm long. The inflorescence is a spike, the flowers have bracts, the calyx is tubular, bright/light green in colour and is 4 - 5 lobed. The fruit is a

coriaceous (leathery), one seeded, winged (5) and indehiscent.

Family Commelinaceae

1. *Commelina benghalensis* L.

A creeping herb with a herbaceous stem, with simple leaves which are alternate, with a sheathing base cuspidate, linear to lanceolate, hairy, 2 - 2.5 cm long and 1 - 1.5 cm wide. The flower is blue in colour.

2. *Palisota hirsuta* (Thumb)

A perennial shrub which grows up to a height of 60 – 120 cm tall. The stem is rhizomatous, hairy and erect. The leaf is simple, whorled, hairy on the lower surface and glabrous on the upper surface, a sheathing base, cuspidate, undulate, obtuse, and lanceolate and 20 – 35 cm long and 7 – 10 cm wide. The inflorescence is a raceme with numerous white flowers.

Family Connaraceae

1. *Manotes longiflora* Bak.

A glabrous shrub which can grow to a height of 1.4 m tall. The stem is woody, erect, greenish brown in colour. It has compound (imparipinnate) leaves with 3 - 10 pairs of leaflets. Each leaflet is 2 – 11 cm long and 1.5 – 4 cm broad with 4 - 6 pairs of laterally ascending nerves. The leaflets are acuminate, truncate, entire, glabrous, and shiny deep green in colour. The leaf is 6 – 30 cm long. Inflorescence is a raceme. The fruit is red in colour, kidney shaped, 3 cm long and 1.5cm in diameter. The ectocarp is velvet-like.

Family Convolvulaceae

1. *Ipomoea involucreta* P. Beauv

A twining herb which trails or twines on other plants. The stem is herbaceous, hairy 0.1 - 0.2 cm in diameter. The leaf is simple, alternate, exstipulate, petiolate (with hairy petioles which are 2-5 cm long), acute, entire, auriculate, hastate, hairy, 4 – 10 cm long and 5 – 9 cm wide. The inflorescence is a cymose with a boat shaped bract, hairy with a long peduncle which is 2 – 15 cm long. The peduncle is also hairy. The flower is funnel-like, pinkish in colour and 2 – 4 cm long and 4 – 6 cm wide.

Family Costaceae

1. *Costus afer* Ker-Gawl

A perennial herb which can grow to a height of about 1-2 m tall. The stem is erect, arising from an underground rhizome, herbaceous, and hairy. The leaf is simple, alternate, has parallel venation, cuspidate, entire, truncate, lanceolate, smooth, but has hairs on the midrib, about 20-40 cm long and 8-16 cm wide. The inflorescence is a head/capitulum. The flowers have 2 sepals, white, 3 petals, white.

Family Cyperaceae

1. *Cyperus mapanioides* C. B. Clarke

Sedge with a triangular stem arising from a rhizome. The stem is 30 – 45 cm tall and 0.3 cm thick. The leaf is in a whorl, narrow, and blade-like. The inflorescence is a dense cluster of numerous pale-coloured spikelets, forming a head 2 – 5 cm across, subtended by several conspicuous leaf-like bracts, 30 cm long and 0.7 - 1.1 cm wide. Spikelets 12 – 18 mm long, 3 mm broad with 6 - 9 glumes along each side, glumes rather loosely arranged, 3 mm long, pointed with white hairs along the edges.

2. *Fimbristylis littoralis* Gaudich

Sedge which grows up to 20 – 40 cm long. The stem is triangular, slender, and 0.2 cm in diameter. The leaf is cuspidate, entire, truncate, linear, 20 cm long and 0.2 cm broad and glabrous. The inflorescence is a compound umbel/corymb. The inflorescence is 5 – 7 cm long and about 2 cm wide.

Family Dennstaedtiaceae

1. *Pteridium aquilinum* (L.) Kuhn

An erect, terrestrial fern, 1-3 cm high that has long subterranean rhizomes; the stem is thick, rounded and hairy. The frond (leaf) is long, up to 45 cm, compound, triangular in outline, deeply lobed pinnae. The sori are arranged at the margins of the leaflets/pinnules, with a false indusium or marginal flap.

Family Euphorbiaceae

1. *Alchornea cordifolia* (Schum & Thonn) Muell. Arg

A tropical shrub with erect, woody, branched, stem which may be green or brown in colour.

The leaf is simple, stipulate, alternate, petiolate with petiole which is 4 – 16 cm long and is green in colour. The leaf is acute, serrate, auriculate, cordate, glabrous, and 10 – 17 cm long and 8-10 cm broad.

2. *Euphorbia hirta* L.

An annual herb which grows up to 10 – 20 cm tall. The stem is prostrate, herbaceous, and hairy with tiny brown hairs and produces milky latex when it is cut. The leaf is simple, opposite, exstipulate, petiolate (with petioles that are 0.1 - 0.4 cm long), acute, entire, oblique, lanceolate, hairy on the lower surface and smooth on the upper surface, 2 – 4 cm long and 0.1 - 0.2 cm wide. The inflorescence is a capitulum arising from the leaf axil.

3. *Maesobotrya bateri* (Bail) Hutch

A perennial shrub which grows in cluster and up to a height of 1.5 m tall. The stem is erect, woody and branched. The leaf is simple, alternate, exstipulate, petiolate (petioles are 1 – 5 cm long), acuminate, serrulate, obtuse, lanceolate, glabrous, 4 – 16 cm long and 2.5 – 6 cm wide. The inflorescence is a spike. The fruits are green berries.

4. *Mallotus oppositifolius* Geisel

A perennial shrub which grows to a height of 100 – 150 cm tall, with a woody, erect, branched, stem. The leaf is simple, opposite, stipulate, with stipules that are linear in shape, petiolate with petioles that are 1.5 - 5.5 cm long, acuminate, entire, auriculate, hastate and glabrous. The fruit is 3 seeded and is 0.5 - 1cm in diameter.

5. *Manniophyton fulvum* Muell. Arg.

A terrestrial shrub with erect, woody, hairy stem. The leaf is simple, alternate, mucronate, entire, hastate to palmate, petiolate with petiole which is 5 – 12 cm long. The base is auriculate, the blade is coarsely hairy and 6 – 20 cm long and 8 – 12 cm broad with laterally ascending nerves. The fruit is 3 seeded.

6. *Phyllanthus amarus* Schum. & Thonn

An annual herb with an erect, herbaceous stem which is green in colour. The leaves are compound, alternate, petiolate, stipulate, with 6 - 17 pairs of leaflets. The leaflet is rounded, entire, oblique, elliptic and glabrous. The inflorescence is a cyanthium. Fruits are minute

regma, emerging from the lower surface of the rachis.

Family Hypericaceae

1. *Harungana madagascariensis* Lam. ex Poir.

A glabrous tree, with an erect, branched, and woody stem with red exudate. The leaf is simple, opposite, exstipulate, petiolate (petioles are 0.5 – 2.5 cm long), acute, entire, truncate, sagittate, glabrous, and 4 – 20 cm long and 2 – 9 cm wide. The inflorescence is a compound dichasium with numerous white flowers.

Family Icacinaceae

1. *Icacina trichantha* Oliv.

A perennial shrub which can grow to a height of 40 – 60 cm tall. The stem is erect, hairy, green in colour, and sometimes strangling. The leaf is simple, alternate, exstipulate, petiolate with brown petioles of 0.5 -2 cm long, it is acuminate, entire, obtuse, broadly elliptic, glabrous on both surfaces, 10 – 22 cm long and 6 – 11 cm wide. The fruit is fleshy, velvet red in colour. It also bears tuber.

Family Lamiaceae

1. *Platostoma africanum* P. Beauv.

An erect herb which grows up to 20 – 35 cm tall, with an erect, herbaceous, slightly angled, hairy stem. The leaf is simple, opposite, petiolate (petioles are about 0.8 cm long), acute, serrulate, obtuse, sagittate, glabrous, 1.5 – 4 cm and 1-2.5 cm wide. The inflorescence is a spike which is 9 -15 cm long. It has numerous small, purple flowers on the spike.

2. *Solenostemon monostachyus* (P. Beauv.) Brig.

An annual herb which grows to height of 30 – 60 cm tall, it has a characteristic smell, an erect, herbaceous, quadrangled, hairy stem which is 0.4 – 0.7 cm in diameter and arising from a rhizome. The leaf is simple, opposite, petiolate (petiole 2 – 9 cm long), acute, undulate, acute, cordate to sagittate, smooth but posses hairs on the viens, 3 – 15 cm long and 3-8 cm wide. The inflorescence is a long spike, 15 – 40 cm long with numerous flowers, purple in colour. The inflorescence is stalked.

Family Malvaceae

1. *Hibiscus surattensis* L.

A scrambling herb, which grows to a height of 20 – 40 cm tall. The stem is woody, scrambling, possesses thorns. The leaf is simple, alternate, stipulate, palmately lobed, and petiolate. The stipules look like leaves, while the petioles and leaves bear stellate hairs.

2. *Sida acuta* Burn. F.

A perennial shrub with an erect, woody, rounded, and scantily hairy stem that is brownish green in colour. Leaves are simple, alternate, stipulate, acute, dentate, acute to rounded base, linear to lanceolate, petiolate, with petioles that are 0.5 – 1 cm long and scantily hairy. The leaves are 6 -9 cm long and 3 – 5 cm broad. The inflorescence is a cyme. Calyx; 5, fussed; corolla, 5, yellow in colour. The flower is bisexual, has 7 - 10 carpels, syncarpous ovary. The fruit is a capsule and it splits into 7 – 10 nutlets.

3. *Urena lobata* L.

A perennial shrub with an erect, woody, branched, brown to green stem. the leaf is simple, exstipulate, alternate, petiolate, acute, dentate, acute to truncate, and palmately lobed. The leaf is green in colour and smooth on both surfaces. The inflorescence is axillary. The flower is large, showy, 5 calyx, 5 corolla (pink in colour), contorted aestivation.

4. *Malvastrum capitatum* (Cav.) Griseb.

A prostrate herb with a woody and hairy stem which is 0.2 cm in diameter. The leaf is simple, opposite, and alternate, stipulate, petiolate (petioles 0.6 cm - 1.5 cm long), acute, serrate, auriculate, cordate, glabrous on the upper surface and hairy on the lower surface, and 2 – 7 cm long and 1.5 – 4 cm wide.

Family Melastomataceae

1. *Heterotis rotundifolia* (Sm) Jac. Fel.

A trailing herb with herbaceous, hairy, red stem. The leaf is simple, opposite, exstipulate, petiolate, (petiole 0.5 - 0.8 cm long), acute, entire, obtuse, ovately lanceolate, hairy, 2 cm long and 1.5 – 2 cm wide. The inflorescence is a terminal head. The flower is pink in colour.

2. *Melastomastrum capitatum* (Vahl) A. Fern & R. Fern

An erect herb which is 60 – 70 cm tall. The stem is quadrangled, hairy, and 0.5 cm in diameter. The leaf is simple, opposite, exstipulate, petiolate (petiole is 1–3 cm long and pink in colour), acute, entire, truncate, sagittate, hairy on both surfaces, 5 nerved and 4-7 cm long and 3–5 cm wide. The inflorescence is a cyme. The flower is purple with yellow anthers.

Family Mimosaceae

1. *Mimosa pudica* L.

A prostrate herb with a woody, branched stem that is densely clothed with bristles. It has compound leaves, stipulate, with 12 – 22 pairs of leaflets. The rachis beset with ascending bristles. The leaflets are rounded, entire, truncate, elliptic, glabrous on the upper surface but bristly beneath. The inflorescence is a head and is usually in pairs. The flowers are small, hermaphrodite, with 4 sepals, 4 petals, 4 stamens that are conspicuous and brightly coloured (pink colour). The fruit is a flat pod and are in bunch (apocarpous pistil) and aggregate fruit.

2. *Pentaclethra macrophylla* Benth.

A large woody tree which can grow above 20 m in height. The stem is woody, erect, and branched. The leaf is compound, bipinnate, and alternate. The rachis is hairy. There are 11-20 pairs of leaflets, and are opposite, entire, round, oblique, elliptic, glabrous and 1-1.5 cm long. The fruit is a leathery pod. It is hairy, with laterally appressed seed.

Family Onagraceae

1. *Ludwigia erecta* (L.) H. Hara

A road side weed which grows up to a height of 20 – 50 cm tall. The stem is erect, herbaceous, quad angled, glabrous and about 5mm in diameter. The plant possesses breathing roots which floats on the surface of the water which the plant grows in. the leaf is simple, exstipulate, petiolate, acute, entire, obtuse, oblong lanceolate, glabrous and 4 – 12 cm long and 1.5 – 4 cm wide with 10-15 pairs of laterally ascending nerves. The inflorescence is a raceme, which is axillary. The flower has 4 sepals which are green in colour, valvate

aestivation; 4 petals, yellow in colour, valvate aestivation and very caducuous, ovary is inferior.

2. *Ludwigia hyssopifolia* (G. Don) Exell.

An annual herb which is 60 – 100 cm tall and grows in stagnant water. The stem is erect, branched, and woody at the base, angled (5), 0.6 cm in diameter. It has breathing roots. The leaf is simple, alternate, exstipulate, petiolate, glabrous, cuspidate, entire, obtuse, linear-lanceolate towards the apex, and is 2 – 7 cm long and 0.5 – 3 cm wide. The inflorescence is a raceme. The flower has an inferior ovary and is yellow in colour.

3. *Ludwigia suffruticosa* var *lineares*

An annual herb which grows to a height of 20 – 35 cm tall. The stem is erect, woody, branched, hairy and 0.3 cm in diameter. The leaf is simple, alternate, petiolate (petiole is 0.2 cm long), exstipulate, cuspidate, entire, acute, linear to lanceolate, hairy, 0.5 - 3.5 cm long and 0.3 - 0.9 cm wide. The inflorescence is a raceme. The flower has an inferior ovary and yellow in colour.

Family Papilionaceae

1. *Baphia maxima* Bak

A perennial shrub which grows in cluster, and is 1.5 cm tall. The stem is erect, branched, strongly woody, and 0.4 cm in diameter towards the apex and 0.8 cm in diameter towards the base. The stem has a scaly brown colour. The leaf is simple, alternate, petiolate (petiole is 1 – 2 cm long), acuminate, emarginated, entire, truncate, lanceolate to elliptic, glabrous and 7 – 13 cm long and 3.5 – 7 cm wide. The inflorescence is a spike; flower has 2 epicalyxes, 1 calyx, 8 stamens, anthers are basifixed and one carpel with a superior ovary.

2. *Baphia polygalaceae* (Hook. f.) Bak.

A woody shrub which may be in cluster or single, it is 1.5 -2 m tall. The stem is strongly woody, erect, branched, with scaly structures on the trunk and 0.5 – 1 cm in diameter. The leaf is simple, alternate, exstipulate, petiolate (petioles 1.5 – 3 cm long), mucronate, entire, truncate, lanceolate, glabrous and 4 – 12 cm long and 3 – 7 cm wide unilocarpellate with a superior ovary.

3. *Centrosema pubescens* Benth

A twining herb with a woody, hairy and climbing stem, which is 0.1 cm in diameter. The leaf is

compound, trifoliolate, petiolate, exstipulate. The leaflet is acute, entire round to truncate and elliptic to lanceolate. The surface of the leaflet is hairy and it is 2.5 – 7 cm long and 1.5 - 3.5 cm wide.

4. *Crotalaria mucronata* Desv.

An erect herb/shrub which is 40 – 60 cm high. The stem is erect, woody at the base and herbaceous towards the apex. The leaf is compound, trifoliolate, alternate, petiolate (petioles are 4.5 cm long), mucronate to emarginate, entire, acute, elliptic, glabrous, and the leaflets are 5 cm long and 3 - 3.5 cm wide. The inflorescence is a spike with numerous flowers which are yellow in colour. The fruit is a pod which is 5 cm long and in cluster. The fruit is many seeded.

5. *Crotalaria sphaerocarpa* var. *sphaerocarpa*

An erect herb which is 20 – 25 cm high. The stem is erect, woody, branched, hairy and 0.5cm in diameter. The leaf is compound, trifoliolate, and petiolate (with petioles 0.5 – 1 cm long). The leaflet is cuspidate, entire, obtuse, linear to lanceolate, hairy and 1 – 3 cm long and 0.3 – 0.8 cm wide. The inflorescence is a raceme with yellow flowers.

6. *Desmodium scorpiurus* (Sw) Desv.

A perennial herb which grows mostly on roadsides. The stem is woody, erect, branched, and smooth. The leaf is compound, trifoliolate, petiolate, alternate, stipulate (with stipules that are brown in colour and linear in shape), retuse, entire, obtuse, elliptic, glabrous, green in colour and 1.5 – 3 cm long and 0.8 – 2 cm wide. The inflorescence is a spike with numerous flowers which are reddish purple in colour.

7. *Indigofera tinctoria* L.

A creeping herb with a herbaceous stem which is about 0.3 cm in diameter. It has compound imparipinnate leaves, with 3 – 5 pairs of leaflets. The rachis is 3 – 5 cm long and the leaflets are retuse, entire, truncate, elliptic, glabrous, about 1.5 – 2.5 cm long and 0.5 – 0.8 cm broad. The inflorescence is a spike, with numerous pinkish/peach flowers. The fruits are a pod which may be much on the spike inflorescence. The pod is 1 – 2 cm long and is many seeded.

8. *Lonchocarpus griffonianus* (Baill) Dunn.

An erect shrub which is 2.5 m tall. The stem is erect, woody, branched, hairy (with brown hairs),

about 1 cm in diameter. The leaf is compound, imparipinnate, alternate, stipulate (stipules are lanceolate in shape), petiolate (petioles are 0.4 cm long) and has about 8-9 pairs of leaflets. The leaf is 20 – 30 cm long. The leaflet is acuminate, entire, obtuse, lanceolate, hairy on both surfaces, 4 – 13 cm long and 3-5 cm wide. The inflorescence is a spike with numerous flowers. The flower is papilionaceous with a standard petal. The 2 central petals have hairs on the tip. 5 petals, 10 stamens which are fused towards the base, and 1 carpel. Style is hairy.

9. *Zonia latifolia* Sm.

An erect herb which is woody at the base and wiry. The stem is erect, branched, 0.1 - 0.2 cm in diameter. The leaf is compound, alternate, petiolate, and has a pair of leaflets. The leaflet is acute, entire, obtuse, lanceolate, and softly hairy, 1 – 15 cm long and 0.2 – 0.6 cm wide. The inflorescence is an axillary or terminal raceme with yellow flowers subtended by bracts, up to 0.2 cm long and conspicuously dotted with glands. The fruit is bristly hairy and segmented.

Family Pedaliaceae

1. *Sesamum radiatum* Schum. And Thonn.

An erect herb which is 30 - 40 cm tall with a hairy and herbaceous stem. it has a characteristics smell. The leaf is simple, alternate, petiolate, hairy, stipulate (stipules are 0.20 cm long and petioles about 0.2 -1 cm long). The leaf is also mucronate, ciliate, obtuse, lanceolate, and hairy and 1 – 3 cm long and 0.6 - 1.2 cm wide. The flowers are bell-shaped and have purple, hairy corolla which is 2 – 3 cm long. The fruit is a green capsule that is 0.6-2 cm long and 0.2-0.9 cm wide and is hairy.

Family Poaceae

1. *Axonopus compressus* (Sw) P. Beauv.

A grass which creeps and covers the area where it is found. It has a creeping, herbaceous stem which arises from a rhizome. The leaf is simple with parallel venation, cuspidate, ciliate, obtuse, linear, and glabrous with hairs on the margin, and 5 – 15 cm long and 0.5 – 2 cm wide.

2. *Pennisetum polystachion* (Linn.) Schult

An erect grass with herbaceous, hairy stem which is 0.2 cm in diameter. The leaf is simple, parallel venation, sessile with rough

margin, cuspidate, truncate, linear, and hairy and 12 – 30 cm long and 0.5-1 cm wide. The inflorescence is a spike, slender and purple in colour.

Family Portulacaceae

1. *Portulaca oleracea* L.

An annual herb with an herbaceous, prostrate, smooth, succulent stem. The leaf is simple, opposite, petiolate (petioles are 0.2 cm long), exstipulate, retuse, entire, obtuse, cuneate, glabrous, 1 – 2.5 cm long and 0.8 – 1.5 cm wide. The flowers are small and yellow in colour.

Family Rubiaceae

1. *Mitracarpus villosus* (Sw) DC

An annual herb which grows up to a height of 10 – 15 cm tall. It has an erect, herbaceous, rounded, scantily hairy stem with simple, sessile, opposite and stipulate leaves. The leaf is also acute, entire, obtuse, lanceolate, and glabrous, 2 – 5 cm long and 0.5 - 2 cm wide. The inflorescence is a cyme. The flower is white in colour and small in size.

2. *Oldenlandia herbacea* L.

A road side weed which grows to a height of about 10-25 cm tall. The stem is erect, woody at the base, branched, about 0.1 cm in diameter. The leaf is simple, opposite, sessile, stipulate (stipules are linear in shape), cuspidate, entire, obtuse, linear, glabrous, about 1.5-3 cm long and 0.1-0.2 cm wide. The inflorescence is a cyme with small white flowers which are to be tubular.

3. *Sabicea efulenensis* (Hutch.) Hepper

A creeping herb which creeps on other plants or on the ground. The stem is woody. The leaf is simple, opposite, stipulate (stipules are bract-like, covering the leaf axil), petiolate (with petiole which is 0.1 - 1.5 cm long), acuminate, entire, truncate, lanceolate to elliptic, slightly hairy with tiny whitish hairs. The inflorescence is a head and the flower is purple in colour.

Family Scrophulariaceae

1. *Scoparia dulcis* L.

An erect herb which is 10 – 30 cm tall. The stem is woody at the base, branched, glabrous, and 5-

sided. The leaf is simple, opposite, petiolate with very tiny petioles, acute, serrate, obtuse, lanceolate, glabrous, 1 - 2.8 cm long and 0.2 - 0.6 cm wide. The inflorescence is a raceme with white flowers.

Family Solanaceae

1. *Physalis angulata* L.

An annual erect herb with an angled (5), herbaceous, hollow (in C. S.), stem which is 1.8 cm in diameter. The stem is green in colour but it has some reddish coloration at the branching points. The plant can grow to a height of 50 – 70 cm tall. The leaf is simple, alternate, petiolate (petioles 1.5 – 8 cm long), exstipulate, acute, serrate, acute, elliptic, glabrous and 2 – 14 cm long and 1.5 – 7 cm wide. The flower is solitary arising from axils. The flowers are pedicellate (pedicels are 2 cm long) and bracteolate. 4 calyx, fused, 5 corolla, fused, 5 anthers, adnate and 1 carpel. The fruit is encased in a big bract and it is many seeded.

Family Sphenocleaceae

1. *Sphenoclea zeylanica* Gaertn.

An annual herb with an erect, herbaceous, branched, and glabrous stem which is hollow in cross section, purple in colour and 0.8 cm in diameter. The leaf is simple, alternate, petiolate (petioles are purple in colour and 0.3 - 0.5 cm long), acute, entire, obtuse, lanceolate, glabrous with purple margin and 3 – 7 cm long and 0.8 - 2.5 cm wide. The inflorescence is a terminal spike, conical in shape and 3 – 7 cm long.

Family Tiliaceae

1. *Triumfetta heudelotii* Planch ex Mast.

An erect shrub, 60 – 70 cm tall. The stem is woody, erect, smooth, and about 0.4 cm in diameter. The leaf is simple, alternate, petiolate, cuspidate, serrulate, acute, hastate, and smooth on both surfaces, 4 – 6 cm long and 2 – 3 cm wide. The flower is yellow in colour.

2. *Triumfetta pentandra* A. Rich

An erect shrub, 40 – 60 cm tall, with erect, woody and hairy stem which is 0.5 cm in diameter. The leaf is simple, alternate, petiolate (petiole 1.5 – 2 cm long), stipulate, cuspidate, serrulate, auriculate, hastate, hairy on both surfaces and 2 – 4 cm and 2 - 3.5 cm wide. The

inflorescence is a spike with tiny yellow/ flowers. The fruit is a round indehiscent bristly capsule.

3. *Triumfetta rhomboidea* Jacq.

An erect shrub which is 25 – 60 cm tall. The stem is woody, erect, branched, and hairy with short brown hairs. The leaf is simple, alternate, and variable in size and shape. The upper leaves are ovate, undivided and small, while the lower ones are larger, 2-lobed, 15 cm long and 10 cm wide. They have dentate margin, cuspidate apex, petiolate, hairy on both surfaces. The inflorescence is made up of cluster of flowers at the axils of the leaves. The flower is yellow, 8mm in diameter.

4. *Triumfetta tomentosa* Boj.

An erect shrub, 60 – 80 cm tall. The stem is woody, erect, and hairy, 0.4 cm in diameter. The leaf is simple, alternate, petiolate, cuspidate, serrulate, acute, hastate, and hairy on both surfaces and 4- 6 cm long and 2 – 4 cm wide. The flower is pale yellow in colour.

Family Verbenaceae

1. *Clerodendrum splendens* G. Don.

A small perennial shrub which grows to a height of 40 – 60 cm tall. The stem is erect, woody and sometime straggling. The leaf is simple, opposite, exstipulate, petiolate (petioles are 0.2 - 0.5 cm long), acute, entire, truncate, elliptic, glabrous, 3.5 – 12 cm long and 2 – 6 cm wide. The inflorescence is a compound corymb. The flower: 5 sepals, 5 petals, red in colour, fused to form a tube which is 3 cm long; 5 stamens, about 4 cm long, anthers are dorsifixed.

2. *Stachytarpheta cayenensis* (L. C. Rich) Schau.

A perennial herb with a herbaceous, erect, rounded, brownish green stem. The leaf is simple, opposite, exstipulate, petiolate with petioles that are 0.3 - 0.6 cm long, rounded, serrate, obtuse, elliptic, glabrous and has the same colour with the petiole which is green. The leaf is 1.5 – 4 cm long and 1 - 2.5 cm broad. The inflorescence is a spike and the flowers are purplish white in colour.

3. *Stachytarpheta jamaicensis* (L.) Valv.

A perennial herb with an erect stem, which is herbaceous, rounded and green in colour. The

leaf is simple, opposite, exstipulate, petiolate with petioles which are purple in colour and 1 – 2 cm long. The leaf is rounded, serrate, obtuse, elliptic, smooth and 3 – 9 cm long and 1.5 – 6 cm wide. The inflorescence is a spike with few flowers. The flowers are deep purple in colour.

Family Zingiberaceae

1. *Aframomum meleguata* K. Schum.

A perennial herb which grows to a height of 60 – 100 cm tall. It has an erect, herbaceous, unbranched stem. the leaf is simple, alternate with parallel venation, cuspidate, entire, obtuse, lanceolate, and glabrous. The fruit is fleshy, red in colour, many seeded and arises from the rhizome when the plant is found in cluster.

4. DISCUSSION

The field work of this research recorded 76 species of plants in the University of Uyo main campus. The data provides a medium for classification of the plants into the following classes' based on their abundance. Abundance refers actually to density of population in those sampling units which a given species occurs [16].

The classes were as follows:

- Rare (17 plants)
- Occasional (34 plants)
- Frequent (21 plants)
- Abundant (3 plants)
- Very abundant (1 plant)

The most frequent plant species in the area of study were members of the family Papilionaceae (30%), followed by members of the family Euphorbiaceae (26%) and members of the family Asteraceae (23%). Species of *Combretum* were also found in all the sampling units except *Combretum racemosum* which was found in only one sampling unit.

The vegetation in the area of study is under threat due to massive infrastructural development embarked upon by the university to enable different faculties and units move from the town campus. Some of the rare species included *Acanthus montanus*, *Anthonotha macrophylla*, *Baphia maxima*, *Baphia polygalaceae*, *Callichilia stenosepala*, *Combretum bracteatum*, *Combretum hispidum*, *Dialium guineense*, *Harungana madagascariensis*, *Ludwigia suffruticosa*,

Mallotus oppositifolius, *Pentaclethra macrophylla*, *Physalis angulata*, *Sesamum radiatum*, *Spondias mombin* and *Triumfetta heudelotii*.

Some of the plants in the University of Uyo Main Campus have been known to be useful locally to the Ibibios in the following ways:

- Edibles
- Medicinals
- Other uses

Edibles

The following plants which have been known and reported as plants with edible parts have also been reported to be edible in this work and they include: *Asystasia gangetica*, *Spondias mombin*, *Icacina trichantha*. These plants were reported by Shukla and Chandel [17] to be edible among the Ibibio people of Akwa Ibom State. The fruits and tubers of *Icacina trichantha* have been reported by Etukudo [18] to be edible to the people in other West African countries like Ghana. Other plants that were not previously known as edibles have been documented in the cause of this work to be edible to the Ibibio people of Akwa Ibom State. They include: *Physalis angulata*, *Uvaria chamae*, *Costus afer*, *Alchornea cordifolia*, *Maesobotrya bateri*, *Melastomastrum capitatum*, *Manniophyton fulvum*, and *Solenostemon monostachyus*.

Medicinals

Some plants which were documented as medicinals among the Ibibio people of Akwa Ibom state have been reported by many authors to be medicinals. They include: the leaf spines of *Achanthus montanus* in combination with the entire plant of *Momordica balsamina* are used to cure yaws [19]. The root of *Uvaria chamae* is regarded as purgative and antipyretic while the root/bark is used to treat dysentery and respiratory catarrh and the leaf-juice is applied to wounds, sores, ulcers and cuts while the leaf infusion as a lotion is used to treat injuries, swellings, ophthalma, iritis, conjunctivitis, trachoma [20]. The root of *Uvaria chamae* (pounded or pulverized) is also used to treat nose bleeding, vomiting of blood, spitting of blood (from bronchi, larynx, lungs, trachea), blood in urine, jaundice, fever, piles, catarrh, diarrhea [19]. *Rauvolfia vomitoria* which have been documented to be a very effective anti-malaria herb has been reported by Oliver [21] to

have the following therapeutic properties: sedative antidote, anodyne, neurotic, hyphotic, astringent, corrective antihypertensive, antifilarial, antiarthritis, amongst others. The leaf juice of *Aspilia Africana* has been reported to be used to stop bleeding of serious magnitude and to accelerate healing of cuts, sores and wounds. It is therefore styptic and vulnerary [17]. The leaf of *Emilia sonchifolia* with guinea grains and lime juice cures sore throat [18] and the leaf infusion in local gin is drunk to treat tonsillitis [17]. Etukudo [18] also reports that the bruised leaves of *Chromolaena odorata* and that of mosquito plant (*Clausena anisata*) expel mosquito. Burkil [20] reported that Leaf extracts of *Phyllanthus amarus* by 50% ethanol have been shown to have extensive antibacterial, antifungal and antiviral action. *Portulaca oleracea* which was documented as a medicinal plant have been reported to be rich in vitamin A and C, calcium, phosphorus and iron [22] and is described as emollient, anti-inflammatory, laxative, diuretic and depurative. The fresh leaves of *Stachytarpheta jamaicensis* are consumed in bush tea as "cooling" tonic and blood cleanser, to treat "asthma" and ulcerated stomachs and the tea has been observed to cause "mild non-dose dependent systematic toxicity" in various tissues throughout the body. "such as congestion, fatty changes, and necrosis in liver, blood vessels, kidney, lung and testis, but the brain, eyes, intestine and heart were essentially normal" [23]. *Ludwigia erecta* is not known to have local uses to the Ibibios, but it has been reported to be useful in other countries, for example in Somalia, the leaves are cooked to make sauce for maize and porridge, in Tanzania the leaves are occasionally eaten as a cooked vegetable, in Kenya, a bath made with boiled *Ludwigia erecta* plant is given to relieve fever caused by malaria while in Congo, the plant is sometimes used as forage [24,25].

Other Uses

Some of the plants in the study area have been documented to be useful in other ways apart from being edible and having medicinal properties. They may be useful as ornamentals, firewood, local brooms, and preservatives and even in the industries. Plants such as *Mimosa pudica*, *Clerodendrum splendens*, *Combretum racemosum* and *Centrosema pubescens* are very useful as ornamentals, *Anthonotha macrophylla* is very useful in the rural areas as firewood and owing to its woody stem, it also serves as a popular handle for weeding hoes

while the leaves yield red dye. *Scoparia dulcis* is used as an outdoor broom by the rural dwellers in Akwa Ibom State while *Callichilia stenosepala* and *Saba florida* could be used in the perfume industries owing to their sweet scented flowers.

To ensure proper management of the rare plants, it is hereby suggested that more data on the distribution and frequency of these plants should be carried out on the undeveloped portion of the university main campus so that these rare plants could be introduced to the area allocated for the botanic garden in order to conserve them.

5. CONCLUSION

Generally, the vegetation in the area of study is under threat due to massive infrastructural development embarked upon by the university to enable different faculties and units move from the town campus. However, it is imperative that more floristic inventory of the vegetation surrounding the University should be carried out within short intervals in order to monitor the rate of species destruction while efforts should be put in place to ensure the conservation of the economically important species that are possibly going into extinction.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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